

May 20, 2019

NHTSA Administrator c/o Deputy Administrator Heidi King National Highway Traffic Safety Administration 1200 New Jersey Avenue SE, West Building Washington, D.C. 20590

Submitted electronically via www.regulations.gov

# **RE: Request for Comment, Docket No. NHTSA-2019-0017, Nuro, Inc.**—Notice of Receipt of Petition for Temporary Exemption

Dear Deputy Administrator King:

The Center for Auto Safety (the Center) appreciates the opportunity to comment on the National Highway Traffic Safety Administration's (NHTSA) request for comments on the Nuro petition for temporary exemptions from Federal Motor Vehicle Safety Standards. The Center, founded in 1970, is an independent, non-profit consumer advocacy organization dedicated to improving vehicle safety, quality, and fuel economy. On behalf of our members, and all drivers, passengers, and pedestrians nationwide, the Center requests that NHTSA deny the Nuro Petition as it fails to sufficiently demonstrate it has addressed the safety concerns that may arise as a result of the requested exemptions. Further, because NHTSA has acted unlawfully by crafting a new temporary exemption process that skirts long-standing notice and comment requirements, thus creating the potential for an incomplete petition, review of this petition should be suspended until such time as NHTSA conforms with the law.

#### I. NHTSA's Current Temporary Exemption Rule was Unlawfully Issued in Violation of the Administrative Procedure Act

On December 26, 2018, NHTSA published a Final Rule amending 49 CFR Part 555, "Temporary Exemption From Motor Vehicle Safety and Bumper Standards." The amendment was intended to eliminate a long-standing requirement that the Agency make a determination that a temporary exemption application is complete before publishing a notice and seeking public comment, and prior to deciding whether to grant or deny the petition. The amendment removes the public's right to review and comment on the full range of materials submitted by manufacturers in support of a temporary exemption petition and limits public participation in agency decisions to grant or deny petitions for exemption from Federal Motor Vehicle Safety Standards (FMVSS). NHTSA did not issue a Notice of Proposed Rulemaking to seek public comments on this amendment to Part 555. Therefore, either NHTSA violated the Administrative Procedure Act requirements for notice and comment, or the agency intended for this rulemaking to be considered a Direct Final Rule (DFR) and subject to the agency's direct final rulemaking regulation at 49 CFR 553.14. A review of this regulation provides ample evidence that the agency should only be using the DFR process when a rule is non-controversial, routine, and where little-to-no adverse public comment is expected.<sup>1</sup>

In fact, NHTSA's only stated justification for issuing the rule without formal notice and comment is: "This rule does not impose any additional requirements on exemption applicants or the public. Therefore, NHTSA has determined that notice and public comment are unnecessary."<sup>2</sup> Not only does this statement fail to justify issuance of a direct final rule under the agency's own regulations, it is also demonstrably false. The amended rule places a significant additional burden on the public, who would be unable to provide meaningful comments in response to an incomplete application prior to the agency making a final decision regarding a temporary exemption petition.

NHTSA's final rule set a deadline of February 11 for petitions for reconsideration. On February 11, the agency received a petition for reconsideration from Advocates for Highway and Auto Safety, the Center for Auto Safety, Consumer Federation of America, Consumer Reports, and former NHTSA Administrator Joan Claybrook. The petition requested a stay on the effective date of the final rule until the NHTSA Administrator addressed the issues raised in the petition.

As the agency has received adverse comments within the prescribed period, NHTSA must withdraw the final rule and suspend all temporary exemption proceedings subject to Part 555 until a proper notice-and-comment rulemaking has been conducted. To date, NHTSA is in violation of 49 CFR 553.14(d) by failing to withdraw the December 26 Final Rule. Further, it has not indicated that it is taking any steps to suspend consideration of active temporary exemption petitions. The deadline for agency action has now passed without publication of a notice in the Federal Register explaining the delay, which once again demonstrates NHTSA's inability to follow the agency's own policy.<sup>3</sup>

<sup>&</sup>lt;sup>1</sup>See 49 CFR 553.14 "If the Administrator, for good cause, finds that notice is unnecessary, and incorporates that finding and a brief statement of the reasons for it in the rule, a direct final rule may be issued according to the following procedures. (a)Rules that the Administrator judges to be non-controversial and unlikely to result in adverse public comment may be published as direct final rules. These may include rules that:

<sup>(1)</sup> Are non-substantive amendments, such as clarifications or corrections, to an existing rule;

<sup>(2)</sup> Update existing forms or rules, such as incorporations by reference of the latest technical standards where the standards have not been changed in a complex or controversial way;

<sup>(3)</sup> Affect NHTSA's internal procedures, such as filing requirements and rules governing inspection and copying of documents;

<sup>(4)</sup> Are minor substantive rules or changes to existing rules on which the agency does not expect adverse comment.

<sup>&</sup>lt;sup>2</sup> 83 FR 66158 at 66160.

<sup>&</sup>lt;sup>3</sup> 49 CFR Part 553, Appendix A, Statement of Policy: Action on Petitions for Reconsideration.

At present, the agency is considering whether to grant or deny two temporary exemption petitions pertaining to autonomous vehicles, one from General Motors<sup>4</sup> and another from Nuro.<sup>5</sup> NHTSA maintains that it will continue to accept information to support temporary exemption applications from both manufacturers. However, the agency has been silent on whether it will provide for another notice and comment period once this new information has been submitted, as well as whether any new information will be made public prior to an agency decision. Keeping in mind that NHTSA waited over one year before making the GM petition public, despite multiple informal and formal FOIA requests and a FOIA appeal from the Center, there are no guarantees that the public will be apprised of any new submission by GM or Nuro prior to the agency's decisions in those matters.

While NHTSA asserts that the Part 555 amendment would "expedite the publishing of notices soliciting public comment on exemption petitions," the Center believes that this amendment and subsequent issuance of the Nuro and GM notices is part of an unlawful effort to limit public participation as dozens of manufacturers prepare to file petitions for temporary exemption of autonomous vehicles incapable of meeting the FMVSS. The amendment's main purpose appears to be to allow manufacturers to file incomplete temporary exemption applications, at which point NHTSA could provide the pretense of a notice and comment period while continuing to receive supporting materials from the applicant. NHTSA provides no guarantee that it will properly apprise the public of the full contents of these applications before making the decision to grant or deny these petitions, thus cutting public input out of the process of evaluating exemptions to standards that are critical to public safety.

In sum, the Final Rule hinders the public's ability to thoroughly review issues of great importance to safety and imperils road users by allowing incomplete applications to move forward for exemptions from critical federal safety standards.

#### II. Nuro's Petition does not Adequately Demonstrate Safety

Since the Center's founding in 1970 we have supported the introduction of effective advanced safety technology in both consumer and commercial vehicles. In fact, the Center has long advocated for mandating proven safety technology, often over the objections of manufacturers who preferred to keep such safety devices as premium or luxury features available only as options on their vehicles. From airbags to electronic stability control, from rear view cameras to automatic emergency braking, the Center believes that proven safety technology should be standard not optional.

Yet, built into the proposition of such advancements in safety technology is a need to demonstrate its safety and functionality before using unsuspecting consumers, be they

<sup>&</sup>lt;sup>4</sup> Safety Petition Submitted By General Motors - Petition Under 49 U.S.C. § 30113 And 49 C.F.R. Part 555 To Advance Safety And Zero-Emission Vehicles Through Technology That Achieves The Safety Purpose of the FMVSS, USG 4708, Jan. 11, 2018.

<sup>&</sup>lt;sup>5</sup> Petition for Exemption from Certain Provisions of Federal Motor Vehicle Safety Standard, No. 500, October 19, 2018, Submitted by Nuro, Inc.

motorists or pedestrians, as guinea pigs. Public roads should not be proving grounds any more than they should be the site of unannounced NASCAR races. The Center is hopeful that manufacturers, including Nuro, will achieve the promises of their marketing departments when it comes to driverless vehicle technology. Simultaneously the Center remains firm in its support for mandatory performance standards to avoid unintended consequences from unmanned vehicles dependent upon unproven technology. In the absence of these standards, it is critical that temporary exemption petitions contain sufficient information to allow NHTSA and the public at large to evaluate potential safety shortcomings. Nuro's petition does not meet this standard.

# 1. NHTSA's failure to act on the Center's petition for rulemaking to mandate companies testing automated vehicle systems on public roads submit safety information dramatically impacts the agency and NHTSA's ability to evaluate this petition.

On October 19, 2018, the Center for Auto Safety petitioned NHTSA to immediately mandate the submission of safety information by companies testing automated vehicles system technology on public roads.<sup>6</sup> Seven months later, and three months past NHTSA's own published deadlines,<sup>7</sup> the agency has yet to respond. Thus, there is no uniform data collection process that addresses the scope of public testing and the success, failures, and lessons learned from that testing. Accordingly, NHTSA has missed a golden opportunity to create a fact-specific baseline from which to consider petitions such as those submitted by GM and Nuro.

In short, the Center's petition, which was based on NHTSA's own Highly Automated Vehicle policy, seeks a rulemaking to allow the agency to, at a minimum, acquire enough documentation, detail, or data to demonstrate the autonomous vehicle technology currently being tested, or planning to be tested, on public roads, is at least as safe as vehicles which currently meet all applicable FMVSS. In instances where no current FMVSS exists, the petition recommended that those companies testing or wishing to test autonomous vehicle technology on public roads must provide enough documentation, detail, or data to demonstrate how the safety of the vehicle occupants and those sharing public roads with the vehicle will be safeguarded.

NHTSA has not only chosen to ignore the Center's petition but has irresponsibly, and in dereliction of the agency's basic public safety mission, failed to create any mechanism to collect the type of data that could help to provide the basic information needed to prevent unsafe technology from being tested on our streets. Accordingly, in addition to intentionally undermining the critical task of writing safety standards for autonomous vehicle technology, NHTSA has deprived the agency, and the public, from having safety critical data at its disposal to use in evaluating GM and Nuro's petitions.

<sup>&</sup>lt;sup>6</sup> <u>https://www.autosafety.org/wp-content/uploads/2018/10/Center-for-Auto-Safety-Petition-for-Rulemaking-to-mandate-Safety-Assessment-Letter.pdf</u>, submitted October 19, 2018.

<sup>&</sup>lt;sup>7</sup> Deadline for responding to rulemaking petitions is 120 days. 49 CFR § 552.8.

## 2. More information is needed in order for NHTSA to properly evaluate and make a final determination on Nuro's exemption petition

The petition does not provide sufficient information to enable the agency to determine whether exempting the vehicle would make the development or field evaluation of a lowemission motor vehicle easier. Nuro does not provide a definition of 'safe', does not provide a baseline for the level of safety it hopes to achieve, does not provide safety requirements, criteria, or metrics that are useful in tracking progress toward 'improved safety', and does not provide any insight on how or when it would transition from 'early on-road tests (that) would occur with human-manned professional safety drivers' to fully autonomous operations.

To protect public safety, prior to rendering its final determination the agency should require:

- documentation of the objective safety requirements, standards, and criteria that form the basis of the R2X safety assessment;
- a comparison of the R2X conformance to those criteria in comparison with human drivers;
- objective safety performance results based on private tests preceding public road testing including pedestrian and other vulnerable road users;
- a determination that the R2X has no deleterious safety impact on other motorists who would be required to navigate around these lower speed vehicles;
- a rationale for believing that preliminary test results may be projected into safe operation in the high-density residential areas that are the intended Operational Design Domain (ODD) of the R2X;
- the criteria to be satisfied before transitioning from human-manned safety drivers to autonomous operations;
- planned monitoring and reporting of objective safety data during the exemption period;
- that Nuro show that the R2X has sufficient sensors and resources to start and stop safely in high density neighborhoods where it might attract children and curious adults into close proximity to a stationary vehicle;
- that the R2X doors are equipped with interior trunk releases as per FMVSS 401 to assure that humans cannot be trapped within;
- a determination that the R2X actually improves the safety of motorists and vulnerable road users alike before approving its use on public roads.

### 3. Nuro's petition fails to justify public on-road testing

Nuro's ADS's reliance on "advanced machine learning" to improve driving performance does not justify public on-road testing to obtain additional ADS safety gains. Nuro's petition does not provide evidence that its prior tests have exhausted the possibilities for establishing a safety baseline, nor that additional gains are unavailable. The prior testing

objectives, scope, and results are not revealed in the petition. The basis for judging that R2X operation on public roads will be 'safe' are not revealed, and indeed the planned reliance on 'early on-road tests (that) would occur with human-manned professional safety drivers'<sup>8</sup> suggests that Nuro has limited confidence in R2X safe operation.

A comprehensive safety plan and assessment should be included in every successful ADS petition. Logically, at some point in the future there are likely to be diminishing returns from continued testing with passenger cars retrofitted with ADS functionality, but Nuro has presented no evidence it has reached that point.

If AI machine learning is being used to continuously change its ADS software, the safety of the ADS should be monitored and evaluated as would any other system, by comparison of appropriate safety metrics with objective standards to verify that the R2X operation has no deleterious impact on overall public road safety, and that it is in fact an improvement over human-driver operation as claimed.

# 4. Nuro's ADS performance quality should be assessed in evaluating the Nuro petition

NHTSA should consider the quality of the performance of Nuro's ADS as part of its assessment of whether granting Nuro's petition is in the public interest and consistent with the Safety Act. In fact, it is essential to evaluating ADS safety. A comprehensive safety plan and assessment should be included in every successful ADS petition. The first step, and one that has not been taken by NHTSA, is establishing the safety standards and criteria to which an ADS must conform, e.g., requirements to negotiate a path through oncoming traffic when making a left turn, stop when a pedestrian crosses the vehicle's path, and yield to emergency vehicles.

Petitions for FMVSS exemption on vehicles with automatic driving systems should be evaluated based on statistically significant objective safety data conformance to meaningful safety criteria including the entire vehicle control system response to external stimulus (e.g., a traffic situation that requires a driver response). The FMVSS in many cases have an implicit human operator bias, and ADS developers need to show that they have successfully replicated in their automatic systems the human sensory capability, responses, and judgment implicit in the specific FMVSS for which exemption is sought. The FMVSS have not been updated as required for high or full automation to remove the human operator bias.

The Center has provided to NHTSA a methodology it believes is a reasonable approach to evaluating and approving autonomous vehicle operation in specific ODDs. That methodology may be found in its response to NHTSA's Advanced Notice of Proposed Rulemaking: <u>Pilot Program for Collaborative Research on Motor Vehicles with High or Full Driving Automation.<sup>9</sup></u>

<sup>&</sup>lt;sup>8</sup> Nuro petition, pg. 19.

<sup>&</sup>lt;sup>9</sup> Center for Auto Safety comments on NHTSA's ANPRM: Pilot Program for Collaborative Research on Motor Vehicles with High or Full Driving Automation, at:

https://www.regulations.gov/document?D=NHTSA-2018-0092-0040, submitted December 10, 2018.

#### 5. The petition does not provide sufficient evidence to determine whether an exemption would unreasonably degrade the safety of the vehicle

The petition does not provide sufficient information to enable the agency to determine whether exempting the vehicle would unreasonably degrade the safety of the vehicle. A comprehensive safety plan and assessment should be included in every successful ADS petition. For vehicles with automatic driving systems, petitions for FMVSS exemptions should be evaluated based on statistically significant objective safety data conformance to meaningful safety criteria including the entire vehicle control system response to external stimulus (e.g., a traffic situation that ordinarily requires a driver response).

The FMVSS in many cases have an implicit human operator bias. They have not been updated for high or full automation. For example, if a petitioner requests exemption from some portion of inside and outside mirrors FMVSS, the individual exemptions must be evaluated in the complete ADS operational context. The petition must provide statistically significant evidence, potentially including simulation and test, that the overall vehicle response including the requested FMVSS exemption provides safety at least as good as comparable non-exempt vehicles with human drivers in the same traffic situations. In the stated example, a human driver might use the information provided by mirrors to respond to following police or emergency vehicles, to take evasive action to avoid or prepare for an imminent accident, or to reach a state of increased driving vigilance because of unusual behavior seen in those mirrors.

The FMVSS exemption petition must be evaluated in all contexts of human responses to information provided by the feature of interest, and whether the automatic driving system provide equivalent responses with potential impacts on vehicle or occupant safety.

# 6. Nuro has not provided adequate information on remote operator training

Nuro did not provide sufficient information concerning the training of the remote operators. The petition's only reference to training is the unsupported aspirational assertion of, "…experienced human operators who are extensively trained in the vehicle's systems."<sup>10</sup> There is no additional information that allows evaluation of the claim. The level of training of the remote operators is impossible to determine from the petition.

In general, remote operator training and qualification should be part of a comprehensive safety plan, supported by test data accumulated prior to approval of use on public roads, and that is not included in the petition, that demonstrates how the combination of ADS capabilities and remote operators provides objective evidence of R2X safety. The petition fails to establish what the safety requirements are, how compliance is validated, or how safety compliance will be updated based on experience gained on public roads.

<sup>&</sup>lt;sup>10</sup> Nuro petition, pg. 5.

The extent to which remote operators should "monitor" the R2X's operation to detect reductions in, or complete losses of, its ADS's functionality (*i.e.*, could they observe the R2X's sensor readings in real time, or would they simply wait for the ADS to send an alert) should be included in the safety plan and compliance with the plan should be included in the safety assessment.

Without understanding the control system design, safety design, training or capabilities of the remote drivers, and the legal responsibilities of the remote drivers versus the ADS 'driver,' any recommendations would be purely speculative. Any feature that provides enhanced capability to avoid collisions is a best practice, and if remote operators provide that enhancement then it is desirable. This should be reflected in a safety assessment. Nuro should provide guidance regarding whether it would be appropriate to take control based on the control system design, the safety assessment, and remote driver capabilities and training, none of which are revealed in the petition.

### 7. Nuro's petition does not provide details of long-term oversight

Nuro maintains that if it receives the exemptions, it "would take a highly incremental and controlled approach to deployment"<sup>11</sup> which would include extensive evaluation and mapping of any area where the vehicles would be deployed, and that "any early on-road tests would occur with human-manned professional safety drivers with override abilities supervising the vehicle for any anomalies in behavior."<sup>12</sup> These statements are purely qualitative and are not assessable based on the Nuro petition.

A comprehensive safety plan and assessment should be included in every successful ADS petition. Determination of how road tests with human drivers will be translated and transitioned into R2X operations should be included in the plan in the context of ADS design, algorithms, maturity, and remote driver capabilities. The petition must show how the R2X will achieve safety levels at least as good as human drivers performing the same task before the R2X is allowed onto public roads. The determination of the appropriate duration of human drivers in R2X analogs, transferal of information thereby gained into R2X controls, and augmentation of R2X ADS by remote operation would properly be included in the safety plan and safety assessments.

## 8. Nuro did not provide sufficient information about how the R2X would interact with human-controlled vehicles on the road.

Nuro's petition did not provide sufficient information about how the R2X would interact with human-controlled vehicles on the road. The petition does not discuss how the R2X would negotiate challenging traffic situations, e.g., negotiating a path through oncoming traffic when making a left turn, stopping when a pedestrian crosses the vehicle's path, and yielding to emergency vehicles. Petitions for FMVSS exemption on vehicles with automatic driving systems should be evaluated based on statistically significant objective safety data conformance to meaningful safety criteria including the entire vehicle control

<sup>&</sup>lt;sup>11</sup> Nuro petition, pg. 19.

<sup>&</sup>lt;sup>12</sup> Nuro petition, pg. 19.

system response to external stimulus (e.g., a traffic situation that requires a driver response).

The FMVSS in many cases have an implicit human operator bias, and ADS developers need to show that they have successfully replicated in their automatic systems the human sensory capability, responses, and judgment implicit in the specific FMVSS for which exemption is sought. The FMVSS have not been updated as required for high or full automation to remove the human operator bias.

Nuro did not provide enough information about its design features to enable the ADS to operate reliably and to minimize safety risks that may occur if the ADS malfunctions or otherwise encounters a driving situation it cannot handle. Almost all of the information provided in the petition is qualitative and generalized. A comprehensive safety plan and assessment should be included in every successful ADS petition. The agency should ask to see and review a Failure Modes and Effects Criticality Analysis (FMECA) that examines the impact of safety-critical hardware and software component failures on operations and safety.<sup>13</sup>

### 9. Additional concerns

Nuro has not provided sufficient technical detail to determine the degree to which the R2X's capabilities or ODD could be changed through post-deployment software updates over the lifetime of the R2Xs for which Nuro is seeking an exemption. It is not clear from the petition how the R2X, which does not have provision for a human driver, could be anything but a level 5 vehicle. The ability to make ODD changes over the life of the vehicle would be desirable should there be a determination that R2X operation in some portion of a previously approved ODD has or will become unsafe. NHTSA should address the possibility of such changes in conducting its safety analysis by requiring that any ODD changes are vetted by appropriate experts and approved by the governing authorities.

Nuro did not provide enough information on development and testing to support the assessment of safety performance of the vehicle. Nuro did not provide any applicable safety standards, requirements, or criteria, or any meaningful comparison with the safety of human-driven vehicles in similar use. Nuro should provide additional specificity on the types of sensors, fields of view, elevation angles, conformance to road surface when cresting hills and turning, and on the ability of the R2X to detect and avoid children and other small objects in immediate proximity to the vehicle when initiating motion from a stop. The R2X might be an attraction for children in the high-density neighborhoods which are its intended ODD, and their safety should be a special concern.

Nuro did not provide enough information about pedestrian detection and mitigation strategies. Nuro's discussions of pedestrian safety were limited to the potential virtues of mirror removal and windshield replacement. There is no evidence in the petition that the R2X would be able to sense and respond appropriately around school buses, emergency

<sup>&</sup>lt;sup>13</sup>Procedures for Performing a Failure Mode, Effects and Criticality Analysis, <u>http://fmea-fmeca.com/milstd1629.pdf.</u>

vehicles, neighborhood construction, or even pedestrians, bicyclists, or other vulnerable road users. There is no evidence that the R2X would be able to understand and conform to any traffic laws except those incidental to its limited top speed.

Nuro has not provided any objective safety requirements, criteria, or targets, nor any evidence that R2X operation will be comparable to human drivers performing the same mission. A comprehensive safety plan and assessment should be included in every successful ADS petition. Without a safety analysis showing the contribution of the safety features described in the petition (rounded edges, pedestrian "crumple zones") to the overall safety projection, it is simply not possible to evaluate their significance. The petition should be rejected because it does not substantiate safe R2X operation in any environment, much less the densely populated suburban environment that is its target ODD. If it should turn out that those features are important to the overall R2X operational safety in a successor filing, then NHTSA should require Nuro to provide testing data to demonstrate the effectiveness of these measures

Nuro's petition did not provide enough information regarding what types of "trigger" events would require the remote operator to take over. Nuro did not provide sufficient details on its control system design, algorithms, or safety objectives to support a recommendation for events that should "trigger" the remote operator to take over. Before a petition is granted for R2X or any other ADS for use on public roads, the petitioner should provide the safety requirements underlying its design, metrics for validating conformance to the safety requirements, evidence that the safety performance is at least as good as human drivers performing the same task in an FMVSS compliant vehicle, and the plan for verifying that safety increases over time as ADS experience accrues. A comprehensive safety plan and assessment should be included in every successful ADS petition.

The petition states, "Where the system determines the a (sic) fail-safe mode is necessary, the vehicle will pull over to the closest available safe location possible."<sup>14</sup> It fails to provide any information related to what circumstances or conditions will lead to a determination that a fail-safe mode is necessary. There is insufficient information to determine whether the various fail-safe protocols described in the petition provide a sufficient level of safety. The petition should include a safety plan including both expected and unexpected situations and events, include safety requirements and criteria and a description of plans to, or evidence that it has validated compliance with the safety requirements including as a minimum evidence that the planned operation is at least as safe as human drivers performing the same tasks. The petition does not pass that test.

Additionally, the potential effects of cyber threats on safety should be included in a safety plan and ongoing assessments of compliance with the plan. The petition did not include a safety plan.

Generally speaking, 'end-to-end encryption' is a typical component of a cybersecurity plan but is insufficient in and of itself to assure cybersecurity and is therefore an

<sup>&</sup>lt;sup>14</sup> Nuro Petition, pg.5.

inadequate basis for granting an exemption. Nuro should provide a cybersecurity plan that addresses the full scope of responses to cyber intrusion as well as spontaneous executable errors that might arise from, for example, single event upsets or component failures. A FMECA would be a useful tool for assessing the safety impacts of such event and should be included in any ADS exemption petition.

There are additional safety considerations that the agency should analyze in deciding whether to grant Nuro's petition. NHTSA should require the development of an ADS safety plan and mechanisms for assessing compliance with the safety plan. Initial assessment based on analysis and test results prior to approval for operation on public roads should show that the R2X will be at least as safe as human drivers performing the same task and has the capability to conform with all traffic laws, including those that ordinarily require human actions such as providing license, registration, and insurance information following a collision and remaining at the scene of an accident, particularly if there is an injury of a human, until the incident is resolved.

Also, for purposes of establishing root cause of collisions and in the absence of a human driver who could provide supporting information, ADS data recorders should be required and enhanced relative to the existing standard in Title 49: Chapter V, part 563. The event data recorded should include the physical configuration and state (such as tire pressure, sensor status, and built-in-test/built-in-diagnostic information) of the vehicle; the software configuration of the vehicle; the vehicle sensor data, V2V and V2X information, and CAN/other data bus information from one minute before a collision through the time of collision until at least 10 seconds after the vehicle comes to rest; and any other information necessary for collision reconstruction and root cause resolution. The data should be recorded in flat files in non-proprietary formats and accessible through commonly used connectors so that the data can be extracted and used without intervention of the developer, with appropriate protections for proprietary data and personal information.

### III. Conclusion

Preclusion of full public review of critical exemption applications is perhaps the worst possible choice if the agency's ultimate goals are safety and consumer acceptance of potentially life-saving AV technology. Drivers, riders, and pedestrians already concerned the safety of autonomous vehicles<sup>15</sup> are provided no solace by a government that refuses to issue any standards of performance or requirements for AV manufacturers. They should be even more concerned by NHTSA's attempts to keep the public in the dark as the agency maneuvers to allow these vehicles on the road without concern for the agencies' own regulations.

NHTSA's unlawful issuance of a new temporary exemption rule at the same time as it considers the first applications on autonomous vehicle exemptions from FMVSS is more than just poor planning, it suggests a bias against public participation in rulemakings, and

<sup>&</sup>lt;sup>15</sup> *Three in Four Americans Remain Afraid of Fully Self-Driving Vehicles,* AAA, March 14, 2019, available at: <u>https://newsroom.aaa.com/2019/03/americans-fear-self-driving-cars-survey/.</u>

towards expedited approvals for manufacturers who have not performed the work required to demonstrate that their vehicles can be trusted on American roads.

Finally, the Center reiterates its request that NHTSA withdraw its temporary exemption rule and proceed with a proper notice-and-comment rulemaking. Incoming temporary exemption petitions should not be processed until the agency has clarified the regulation governing these petitions.

Sincerely,

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Jason Levine Executive Director